

CLAIMS

Claim 1 (currently amended) A procedure for layered composition of models, comprising the steps of: applying whereby at least a first material layer that includes a moulding sand and optionally a bonding agent that includes a salt-crystal binder, a protein binder, or both is applied to an assembly platform, and applying ~~followed by selective application of a second material layer that includes a moulding sand and optionally a bonding agent that includes a salt-crystal binder, a protein binder, or both; and repeating~~ these two application steps are repeated until the required model is achieved and both materials form a solid structure in an appropriate mixture ratio, the first material layer, the and/or second material layer or both comprises a bonding agent ~~encompassing~~ comprising a salt-crystal binder, a and/or protein binder, or both.

Claim 2 (currently amended): A procedure according to claim 1, whereby the bonding agent is mixed into the material of the first material layer.

Claim 3 (currently amended): A procedure according to claim 1 ~~or 2~~, whereby the first material layer includes is a mixture comprising a solvent, the bonding agent and moulding sand.

Claim 4 (currently amended): A procedure according to ~~one of the previous claims~~ claim 3, whereby the moulding sand is coated with the bonding agent.

Claim 5 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the bonding agent is mixed into the material of the second material layer.

Claim 6 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the first material layer comprises moulding sand and bonding agent, which is selectively contacted with ~~and the second material comprises a solvent.~~

Claim 7 (currently amended): A procedure according to ~~one of the previous claims~~ claim 6, whereby the solvent essentially comprises water.

Claim 8 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the ~~second material~~ solvent is applied by means of droplet generation.

Claim 9 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the ~~second material~~ solvent is applied by means of screen printing or spraying through a template.

Claim 10 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the solvent is removed by drying after an appropriate reaction time has elapsed.

Claim 11 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the moulding sand comprises quartz sand, zircon sand, olivine sand and/or fireclay sand.

Claim 12 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the bonding agent comprises magnesium sulphate, sodium polyphosphate and/or proteins.

Claim 13 (cancelled).

Claim 14 (new): The procedure of claim 1, whereby the model is metal casting mould

Claim 15 (new): A procedure for layered composition of a metal casting mould, comprising the steps of:

- a) mixing solid particles of a bonding agent comprising a salt-crystal, a protein or a combination thereof, with a sand that comprises quartz sand, zircon sand, olivine sand, fireclay sand or a combination thereof, to form a bonding agent/sand admixture,
- b) applying a thin layer of the bonding agent/sand admixture to an assembly field of an assembly platform;
- c) selectively applying a solvent to the bonding agent/sand admixture in required areas;
- d) lowering the assembly platform; and
- e) repeating at least steps (a)-(c) for applying an additional layer.

Claim 16 (new) The procedure of claim 15, characterized in that the solvent is water and is applied in a sufficient dose so that it is capable of bonding particles of sand within a layer to each other, to underlying sand particles that may be present; and the moulding sand comprises quartz sand, zircon sand, olivine sand, fireclay sand or a combination thereof; and

Claim 17 (new) The procedure of claim 15, characterized in that the sand includes a quartz sand and the bonding agent includes a salt-crystal binder.

Claim 19 (new) A metal casting mould including a plurality of layers of a bonding agent/sand admixture comprising a salt-crystal, a protein or a combination thereof, with a sand that comprises quartz sand, zircon sand, olivine sand, fireclay sand or a combination thereof, prepared according to the method of claim 15.

Claim 20 (new): A procedure for layered composition of a metal casting mould, comprising the steps of:

- a) mixing solid particles of a bonding agent comprising a salt-crystal, a protein or a combination thereof, with a sand that comprises quartz sand, zircon sand, olivine sand, fireclay sand or a combination thereof, to form a bonding agent/sand admixture,
- b) applying a thin layer of the bonding agent/sand admixture to an assembly field of an assembly platform;
- c) selectively applying water, in a sufficient dose so that it is capable of bonding particles of sand within a layer to each other, to underlying sand particles that may be present, to the bonding agent/sand admixture in required areas for reacting it with the bonding agent/sand admixture;
- d) drying the water;
- e) lowering the assembly platform; and
- f) repeating at least steps (a)-(d) for applying an additional layer.

Claim 21 (new) The procedure of claim 20, further characterized by a step of recycling the sand from the resulting mould.